

Water Contact Diseases

Schistosomiasis— Wading or swimming in water contaminated with feces. An attack rate of less than 1 percent a month could occur.

- Threat year-round; countrywide
- Symptoms — fever, chills, nausea
- Hospitalization of 1–7 days

Prevention — Do not swim/wade in unapproved water; wash skin and clothing after exposure to freshwater streams/ponds.

Others — [Leptospirosis](#)

ENVIRONMENTAL RISKS

Short-term health risks

- Food or water contaminated with fecal pathogens or raw sewage
- Extreme heat, high altitude and airborne dust and sand

Long-term health risks

- Air contamination in industrial and urban areas
- Chemical contamination of food or water

HAZARDOUS ANIMALS AND PLANTS

Venomous Snakes — Adders, burrowing asps, mambas, boomslangs, vipers, cobras, and garter snakes are present countrywide; some have lethal venom; others can spit venom causing blindness. If bitten, seek urgent medical attention; wash venom from eyes immediately!

Prevention — Do not handle *any* snake.

Large Reptiles and Mammals — Nile crocodiles are considered man-eaters; monitor lizards and pythons are aggressive and can deliver serious bites; hippos, savanna buffalo, and elephants cause numerous trampling fatalities. Seek medical attention if bitten.

Prevention — Do not approach or disturb any reptile or mammal; use caution around river shorelines.

Centipedes, Millipedes, Solifugids, Bees, Ants, Wasps, Blister/Bombardier/Rove Beetles, and Urticating Caterpillars — None with deadly venom but some with stinging hairs; others can inflict painful bites, stings, or secrete fluids that can blister skin. Seek medical attention if bitten or stung.

Prevention — Shake out boots/bedding/clothing prior to use; never walk barefoot; avoid sleeping on the ground.

Scorpions and Spiders — Scorpions are numerous countrywide; some have potentially lethal venom; recluse spider bites can cause serious skin damage. Seek medical attention if bitten/stung.

Hazardous Animals and Plants (Continued)

Prevention — Shake out boots/bedding/clothing prior to use; never walk barefoot; avoid sleeping on the ground; use caution when entering bunkers or abandoned buildings.

Marine Animals — Man-eating sharks, venomous rays, fish, starfish, shellfish, jellyfish, anemones, sea nettles/urchins in coastal waters. Seek medical attention if stung/bitten.

Prevention — Swim at approved beaches; do not handle.

Hazardous Plants — Thorny plants that can puncture skin, produce rashes, and/or cause infections are numerous countrywide. Burning some plants can cause skin rashes and lung damage. Some plants cause abnormal behavior/poisoning if chewed/eaten. Seek medical attention if injured or poisoned from plants.

Prevention — Do not touch, chew, eat, or burn unfamiliar plants; use clothing as a protective barrier for skin; wash contaminated skin/clothing after contact.

HIGH ELEVATIONS

Operations at 6,000 feet can impact unit and individual effectiveness.

Signs of **altitude sickness**: headache, nausea, vomiting, dizziness, fatigue, irritability, coughing

Acclimatization:

- Staged Ascent — Ascend to moderate altitude (5,000–8,000 feet) and remain there for 3 days before ascending higher.
- Graded Ascent — Limit daily altitude to allow partial acclimatization. Spend 2 nights at 9,000 feet, and limit to no more than 1,000 feet per day above each night's sleep.

Treatment — The preferred method to treat any high altitude illness is to evacuate the individual to a lower altitude. See GTA 08-05-060, [A Soldier's Guide to Staying Healthy at High Elevations](#).

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Prepared by:



U.S. Army Center for Health Promotion & Preventive
Medicine

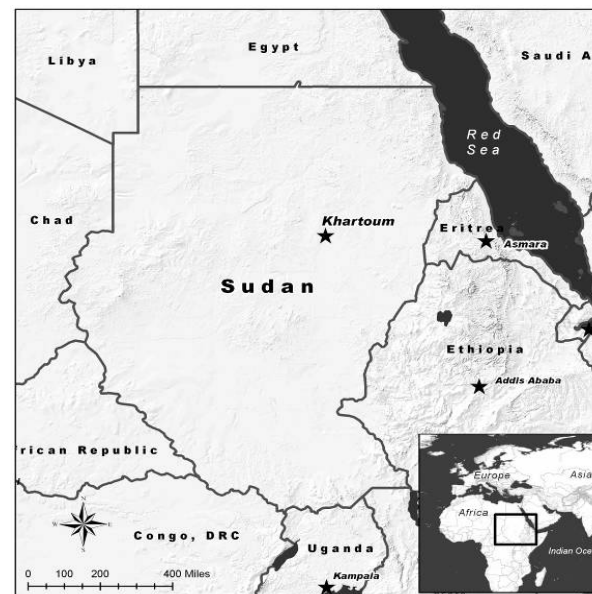
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SHG 052-0406

DEPLOYMENT HEALTH GUIDE: SUDAN



This country-specific guide should be used in conjunction with [GTA 08-05-062, Guide to Staying Healthy](#), and is intended to provide information that can help reduce your risk of Disease and Non-battle Injuries (DNBI) when deployed. This health threat and countermeasure information is based on the most current data available from U.S. Department of Defense medical agencies at the time of production. In addition to the information in this guide, you should also receive force health protection, health threat, and preventive medicine countermeasures training/briefings prior to and, as required, throughout the length of your deployment.

SUDAN OVERVIEW

Location – Sudan is located in North Africa, bordering the Red Sea, between Egypt and Eritrea. Sudan is the ninth largest country in the world and is equivalent to a third of the continental United States.

Climate – Tropical wet and dry seasons in the South to arid desert in the North. In Central Sudan, the mean daily temperature is 89° F during the summer and 74° F during the winter.

Rainfall – In the North, annual rainfall occurs primarily in August and rarely exceeds 4 inches. In the South, rainfall occurs April through November producing 30 to 60 inches.

Terrain – The northern area, comprising 30 percent of the country, consists of barren desert plains. The central region consists of steppes and low mountains. The southern region, known as the Sudd, contains vast swamps and rain forests. There are mountains in the Far South, Northeast and West.

Forces of Nature – “Haboobs” or dust storms, extreme heat, airborne dust and sand.

RISK ASSESSMENT

Sudan is at **VERY HIGH RISK*** for infectious diseases, with an overall disease risk among the worst in the world. Without force health protection measures, mission effectiveness will be seriously jeopardized.

*Based on a combination of all major infectious diseases that occur in a country, the Armed Forces Medical Intelligence Center (AFMIC) assigns an **overall country risk level** of low, intermediate, high, or very high risk, as compared to other countries.

INFECTIOUS DISEASES

Food-borne and Water-borne Diseases

Consuming contaminated food, water, or ice

Diarrhea, bacterial – A potential attack rate of 100 percent a month if local food, water or ice is consumed

- Threat year-round; countrywide
- Symptoms – loose, watery or explosive bowel movements
- Recovery of 1–3 days with antibiotics

Diarrhea, protozoal – A potential attack rate of 1 to 10 percent a month if local food, water or ice is consumed

- Threat year-round; countrywide
- Symptoms – loose, watery or explosive bowel movements
- Recovery of 1–3 days with antibiotics

Hepatitis A – A potential attack rate of 1 to 10 percent a month among unvaccinated personnel consuming local food, water or ice

Food-borne and Water-borne Diseases (Continued)

- Threat year-round; countrywide
- Symptoms – none to flu-like illness
- Severe, 1–4 weeks recovery, sometimes initially requiring hospitalization

Typhoid/Paratyphoid fever – A potential attack rate of 1 to 10 percent a month among unvaccinated personnel consuming local food, water or ice

- Threat year-round; countrywide
- Symptoms – fever, constipation, headache
- Hospitalization of 1–7 days

Prevention – Consume only U.S. military-approved food, water, ice; take **hepatitis A vaccine** and/or **typhoid vaccine** if directed by medical authority.

Vector-borne Diseases

Greatest concern:

Malaria – High number of cases possible

- Threat year-round; countrywide, especially in the South
- Symptoms – fever, chills, sweats; mild to severe, including coma and death
- Transmission – night-biting mosquitoes
- Hospitalization of 1–7 days likely; prolonged recovery or death possible

Dengue fever – Significant number of cases possible

- Threat year-round; countrywide
- Symptoms – high fever, severe muscle pain, severe headache, rash; debilitating
- Transmission – day-biting mosquitoes
- Hospitalization of 1–7 days likely

Trypanosomiasis (gambiense; West African sleeping sickness) – A small number of cases possible

- Threat year-round, especially during the dry season (November through March); variable locations countrywide, but highest threat in the South
- Symptoms – fever, severe headache, rash, weight loss, extreme tiredness (necessitating prolonged periods of sleep); progresses to seizures and death if not treated
- Transmission – tsetse flies
- Hospitalization of 1–7 days likely; always fatal without treatment

Others – Small to rare or undetermined numbers of cases could occur: **chikungunya** (mosquito-borne); **Crimean-Congo hemorrhagic fever** (tick-borne); **leishmaniasis** (cutaneous and visceral; sand fly-borne); **Onyong-nyong** (mosquito-borne); **rickettsioses** (**Boutonneuse fever**, tick-borne); **Rift Valley fever** (mosquito-borne); **sandfly fever** (sand fly-borne); **Sindbis** (**Ockelbo**) **virus** (mosquito-borne);

Vector-borne Diseases (Continued)

typhus (murine, flea-borne); **West Nile fever** (sand fly-borne); **yellow fever** (mosquito-borne).

Prevention – **DEET** on exposed skin; **permethrin-treated uniforms**; **permethrin-treated bed nets**; **malaria prevention pills** as prescribed (CRITICAL); **yellow fever vaccine** as prescribed

Animal Contact Diseases

Rabies – Exposure to virus-laden saliva of an infected animal through a bite, scratch, or breathing airborne droplets; risk is well above U.S. levels.

- Threat year-round; countrywide
- Initial symptoms – pain, tingling, or itching from bite site, chills, fever, muscle aches
- Death likely in the absence of postexposure prophylaxis

Prevention – Avoid all animals; if scratched or bitten, seek medical attention immediately. Get preexposure and/or postexposure vaccinations if prescribed by medical authority.

Others – **Q fever**, **anthrax**

Respiratory Diseases

Meningococcal meningitis – This disease is usually caused by a viral or bacterial infection. It is spread through exchange of respiratory droplets or saliva with an infected person (coughing, sneezing, sharing eating utensils or drinking glasses).

- A small number of cases could occur among unvaccinated personnel who have close contact with infected or colonized individuals.
- Threat year-round; countrywide
- Symptoms – fever, sudden severe headache, stiff neck, rash, nausea and vomiting
- May result in blindness, hearing loss, mental retardation, loss of limbs or death.

Prevention – Washing hands thoroughly after exposure to respiratory secretions, toileting. Do not share utensils, glasses. Persons should cover their mouths and noses when coughing and sneezing. Take **meningococcal vaccine** if recommended by a medical authority.

Others – Tuberculosis

Sexually Transmitted Diseases

Hepatitis B – Unprotected sexual contact with infected person; contact with infected blood/body fluids. A small number of cases are possible.

- Threat year-round; countrywide
- Symptoms – jaundice, fatigue, nausea
- Recovery 1–4 weeks; occasional hospitalization; possible permanent liver damage

Prevention – Abstinence; latex condoms; not sharing needles; **hepatitis B vaccine**